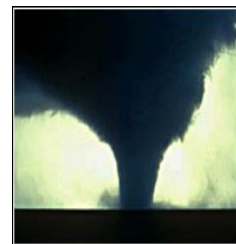




Ozark Observer

National Weather Service Forecast Office
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Join the National Weather Service, Missouri State Emergency Management Agency, and the Kansas Division of Emergency Management to promote Heat and Lightning Awareness Week from June 22-28, 2008.

The dangerous combination of excessive heat and humidity is a persistent danger across the Ozarks region during the summer months. Extreme heat of as high as 113 degrees has been recorded in the Ozarks. Springfield averages 10 days every year in which the temperature exceeds 95 degrees. This is hot enough to pose a danger to even the most resilient individuals.

In addition to the Ozark heat, an average of 62 people die each

year in the United States as a result of lightning strikes. Hundreds of others who are struck and suffer from long-term symptoms including memory loss, numbness, and muscle spasms. Lightning is quite dangerous, and exact strike locations are nearly impossible to predict. However, it is entirely possible to greatly reduce your risk of being struck. For information on heat and lightning, as well as safety tips, check out page 5 of the newsletter.

FORECASTS, WARNINGS, AND MORE
24 HOURS A DAY, 7 DAYS A WEEK!
WWW.WEATHER.GOV/SGF

Severe Weather Websites

[NWS Springfield Daily
Weather Story](http://www.crh.noaa.gov/wxstory.php?site=sgf)

[http://www.crh.noaa.gov/
wxstory.php?site=sgf](http://www.crh.noaa.gov/wxstory.php?site=sgf)

[NWS Springfield Severe
Weather Briefing Page](http://www.crh.noaa.gov/sgf/?n=severebrief)
[http://www.crh.noaa.gov/sgf/?
n=severebrief](http://www.crh.noaa.gov/sgf/?n=severebrief)

[Storm Prediction Center](http://www.spc.noaa.gov)
www.spc.noaa.gov

[Climate Prediction Center](http://www.cpc.noaa.gov/index.php)
www.cpc.noaa.gov/index.php

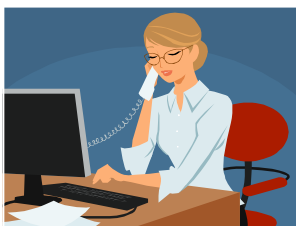
New Employee Focus

The National Weather Service in Springfield welcomes a new Electronics Systems Analyst to the office. Don Parkerson, a native of Southern California, came to the Springfield office from his position as the Electronic Systems Analyst in Tallahassee, Florida. Before working in Tallahassee, Don held the same title at the National Weather Service forecast office in Corpus Christi for twelve years, and spent two years as a Radar Equipment Specialist at Southern Region Headquarters. Prior to joining the work force, he earned his bachelor's degree in Electronic Engineering Technology. Don has a wife of 31 years, Dana, as well as two daughters, Crystal and Amanda. He also thoroughly enjoys fishing, and is excited to bring his boat to the Ozarks to "lower the water" a bit. He also enjoys attending the stock car races, noting that the races at the track in Springfield are quite entertaining. Welcome to Springfield, Don!



Inside this Issue:

Heat and Lightning Awareness Week	1
A Cool, Wet Spring	2
Damaging EF-4 Tornado Hits the Ozarks	3
Super-Resolution Radar	3
Junior Observer Kids Page	4
Lightning and Heat Reference:	5
- Outlook	
- Products	
- Safety	



Student Volunteers

The National Weather Service in Springfield has had the pleasure of welcoming several student volunteers into the office this spring. Brittney Beggs completed an aviation forecast based research project in May. Mark Burchfield is picking up where Brittney left off this summer, and will be elaborating upon the aviation study. Josh Kastman recently joined the volunteer ranks, and will be working on a project with a focus toward forecasting severe hail development. Our very own Hollings Scholar, Justin Titus, will also continue his work at the National Weather Service this summer. Justin is focusing his efforts toward the forecasting of low end (instrument) flight conditions at the Springfield and Joplin airports. Thanks to all of our student volunteers for their hard work and dedication!

A Cool, Wet Spring For Missouri And the Ozarks

By Gene Hatch

Winter of 2007-2008 was one of extremes. It was one of the most unusual winters that the region has seen for many years, with the tornado outbreak on the 7th and 8th of January, two ice storms in February, heavy snow and flooding. What could be more unusual than that?

Spring 2008 decided to do one better. The Ozarks started out with heavy snow on the 4th of March. This was part of wettest March on record for Springfield, West Plains and Vichy/Rolla, and the 3rd wettest for Joplin. April was also above average with respect to rainfall. Overall, Missouri recorded its 4th wettest March through May season in the last 114 years. This is quite an accomplishment if you think about it. However, this Spring's work was not done there. With all the rain came clouds, and this helped to keep temperatures cooler than normal for the spring. Temperatures were so much cooler that the state of Missouri

had its 26th coolest Spring on record over the past 114 years.

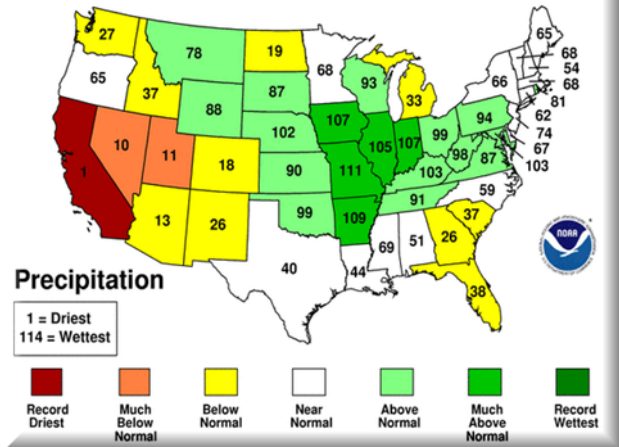
Why was it so wet and cool? La Niña played a large part in this Spring's weather pattern. La Niña is the flip side of El Niño. In general, La Niñas are never quite as cold as El Niños are warm. Also, while El Niños grow in strength with each degree of change in ocean temperature, La Niñas do not. The reason can be traced to the physics that links the atmosphere to the ocean. What allows El Niño to affect weather worldwide is the intrusion of unusually warm water into the eastern Pacific. As this happens, storms (which feed off warm water) inevitably move eastward. But once the eastern Pacific cools, storm formation in this region shuts down. At that point, any further cooling triggered by La Niña can have only a small effect.

So what does this mean for the summer season? The current La Niña is weakening and the water temperatures are trending towards a neutral pattern. This generally signals a return to normal weather. However, the current projection continues the La Niña into July, so keep an eye out for unusual weather.



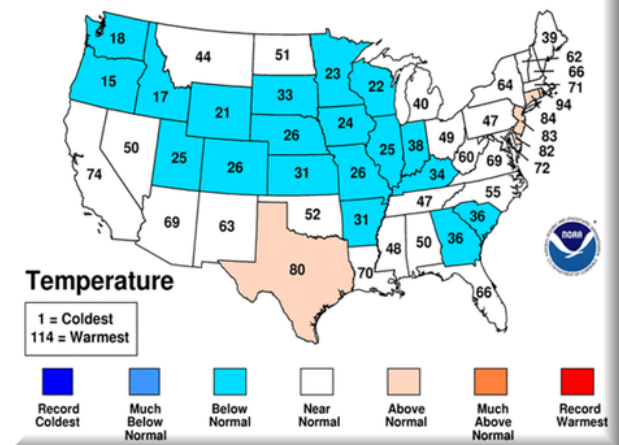
March-May 2008 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



March-May 2008 Statewide Ranks

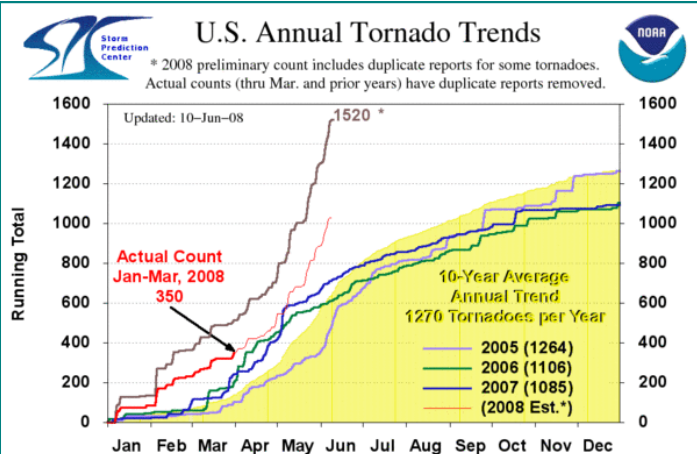
National Climatic Data Center/NESDIS/NOAA



The above maps paint a picture of a spring season characterized by wetter than normal conditions, and cooler than normal temperatures. Numbers indicate the seasonal ranking as compared to the last 114 years since climate records have been kept.

Additional climate information

can be obtained from the Climate Prediction Cen-



At the left is a chart displaying the number of preliminary 2008 tornado reports (grey), the number of official 2008 tornado reports (bold red), and an estimated number of actual 2008 tornado reports based on current trends (thin red).

A Tornadic 2008 Is In the Works

Tornado activity across the United States has been fast and furious so far in 2008. As of the end of May, preliminary numbers indicate that the number of tornado touchdowns has been much higher than normal. Beware, the preliminary tornado numbers from the Storm Prediction Center can be misleading, and do not become official until verified by National Weather Service staff, as well as the National Climatic Data Center. Why is this? As our network of storm spotters increases in density, it has become quite common that the same tornado is reported to the Storm Prediction Center more than once, particularly with larger long-track tornadoes. Therefore, while these preliminary figures can be useful, they must be carefully interpreted until the number is made official. The graph to the left compares the tornado touchdown in terms of preliminary and actual reports, as well as accounts from past years. It indicates a trend toward a much more actively tornadic 2008 in terms of total tornado touchdowns.



Long Track EF-4 Tornado Hits the Ozarks

Tornado Damages Parts of Cherokee, Newton, Jasper, and Barry Counties

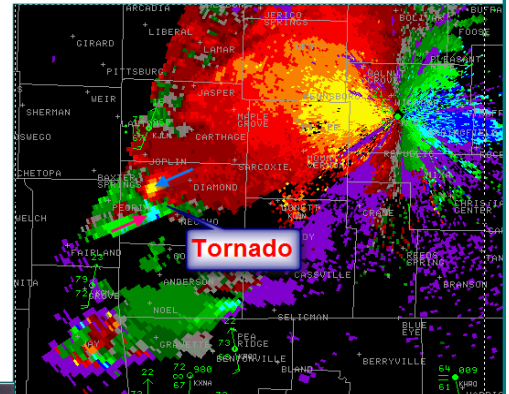


May 10 of 2008 proved to be a day that many will not forget. Just after 5:00 PM, a tornado touched down near the Kansas—Oklahoma state line approximately 25 miles west of the Missouri border. This tornado formed out of the base of an intense rotating thunderstorm known as a supercell.

The tornado gained strength as it raced off to the east at nearly 50 mph. It initially appeared to be making a path directly toward the city of Joplin, but made a gradual turn toward the southeast. This violent tornado struck the town of Picher Oklahoma as an EF-4 tornado, causing

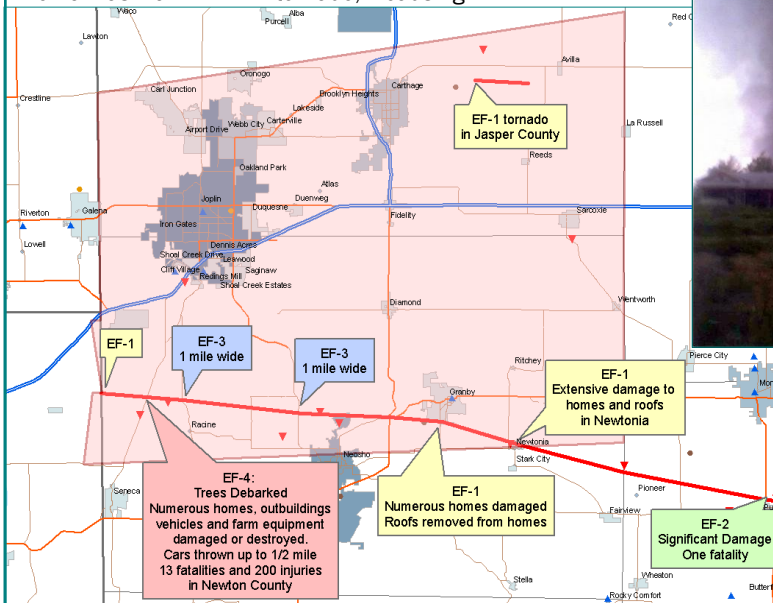
significant damage to a 20 block area of the community. Houses were swept from their foundations, mobile homes were completely destroyed, and trees had the bark picked clean from their trunks.

As the tornado moved east, it weakened a bit, and was briefly seen as one large tornado with a smaller tornado merging into it on its northern flank. It progressed into Newton County Missouri, once again strengthening to an EF-4 as it approached the intersection of Highway 43 and Iris Road.



An image of storm relative velocity from the Springfield radar. Warm colors indicate wind blowing away from the radar while cool colors indicate flow toward the radar

This violent storm continued to track to the east-southeast, at times expanding to approximately one mile wide. The tornado continued its rampage into Barry County, damaging homes, businesses, and even a large turkey farm. It finally lifted near the community of McDowell, but was yet to give up. The same storm produced another EF-1 tornado just to the south of the main storm. This last tornado finally lifted near Jenkins.



The most damaging segment of the tornado track was over portions of western Newton county, where EF-4 damage occurred with winds estimated at 170 mph.

Numerous homes and businesses were damaged or destroyed along the approximately 75 mile tornado track. Other tornadoes touched down on the same evening near Carthage, Missouri, and Faulkner, Kansas. By the time the storms had passed, they were responsible for 16 fatalities in Missouri alone. The tornadoes also caused at least 200 injuries, produced straight line winds in excess of 80 mph, and hail to the size of softballs near Baxter Springs, Kansas. May 10 of 2008 was truly a day for the record books...one that we all hope to never see the likes of again.

Super Resolution Radar Arrives!

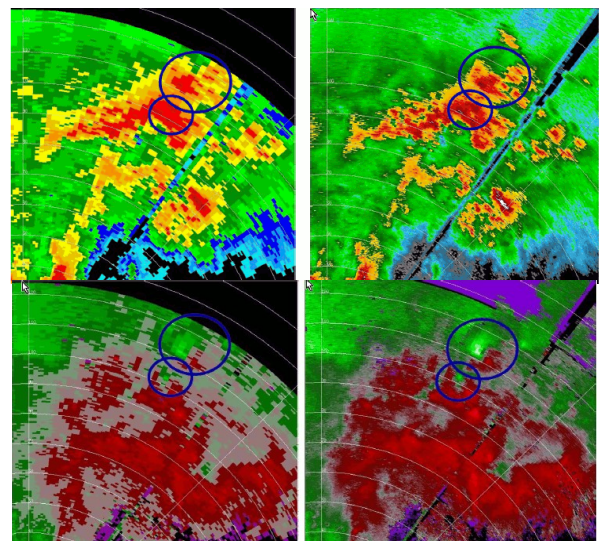
A new advancement in Doppler Radar technology has made its way to the National Weather Service in Springfield. This product effectively quadruples the amount of radar data that the National Weather Service can use in the warning decision process.

What does this mean for the general public? Warning forecasters will use this high resolution data to send out more accurate tornado, severe thunderstorm, and flash flood warnings...

better protecting people from the dangerous and volatile Ozarks weather.

This radar data will initially not be available on the National Weather Service web site. However, some third party vendors are distributing the super resolution data. Please check with your vendor for availability.

To the right are examples of the "legacy" radar data (left), and the super resolution radar data (right).



Junior Observer Page

Word Find!

Search for these weather words:

Drought Thunder

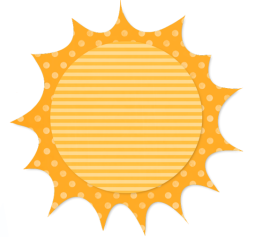
Warning Heat

Advisory Flood

Bolt Windy



W	Y	A	B	A	I	L	A
R	A	D	O	O	L	F	D
W	A	R	N	I	N	G	V
I	L	O	B	O	L	T	I
N	D	U	G	A	W	T	S
D	F	G	O	O	L	A	O
Y	T	H	U	N	D	E	R
V	M	T	B	R	O	H	Y



Try This Weather Experiment!

Make Your Own Lightning!

Steps:

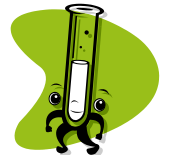
1. Poke the thumbtack through the middle of the pie plate.
2. Stick your pencil's eraser on the thumbtack. Use this for a handle.
3. Turn the Styrofoam plate upside down and rub the wool sock on the bottom of the plate for about a minute.
4. Put the metal pie plate on the Styrofoam tray.
5. Touch the metal plate with your finger. You might get a shock!
6. Hold the pencil handle and lift the metal plate.
7. Put the metal plate near a door handle and watch for your homemade lightning!

What you will need:

A wool sock
Styrofoam Tray
Disposable Aluminum Pie Plate
Pencil with an Eraser
Thumbtack

What's happening...

A negative charge builds up on the Styrofoam tray when you rub the wool sock on it. This charge is then transferred to the pie plate. You noticed a spark...lightning...when you touch the plate to the door handle because the plate and the door have opposite charges. The charges want to balance out so they shoot across to join each other, and what you see is a lightning bolt! Thunderstorms work in the same way by separating charges. However, thunderstorms operate on a much larger, more powerful scale.





Summer Climate Outlook

The current outlook from the Climate Prediction Center indicates that summer months over extreme southeast Kansas and southwest Missouri will be characterized by slightly below normal temperatures. The current outlook also calls for precipitation to be near normal conditions this summer.

Interested in more information on outlooks and climate? Visit the [Climate Prediction Center](http://www.cpc.noaa.gov/index.php) website at www.cpc.noaa.gov/index.php.



NWS Springfield Heat Related Products

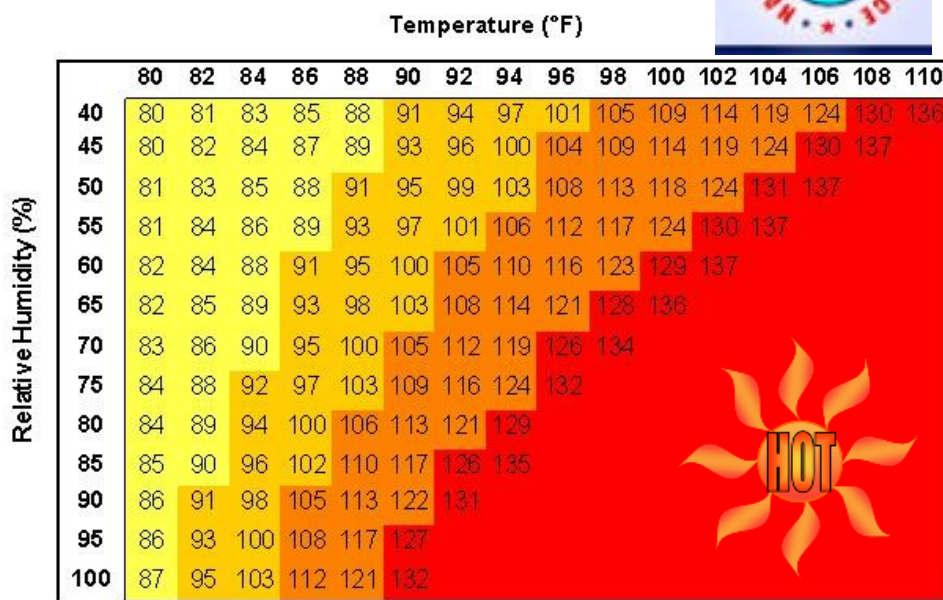
Your National Weather Service in Springfield issues heat related warnings and advisories to keep you updated with the latest hazardous weather. Here are some of the products we issue:

Heat Advisory - Heat Index (HI) of 105 degrees, or a maximum temperature of 100 degrees or greater.

Excessive Heat Warning - HI of 105 degrees for 4 days and a minimum 24 hour HI in the middle 70s. Warnings are also issued for a HI of 110.

Hazardous Weather Outlook - Daily at 6 AM and 1 PM to highlight the potential of any hazardous weather over the next few days.

Area Forecast Discussion - Daily at 3 AM and 3 PM for a more in-depth look at the 7 day forecast.



Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution Extreme Caution Danger Extreme Danger

Heat and Lightning Safety

Sunburn	Redness and pain, swelling, fever, blisters, headaches.
Heat Cramps	Painful spasms usually in muscles of legs or abdomen.
Heat Exhaustion	Heavy sweating, weakness, skin cold, pale, and clammy. Fainting and Vomiting.
Heat Stroke	High body temperature >105, hot dry skin, rapid pulse, possible unconsciousness.

Heat:

- Drink plenty of water or non-alcoholic fluids. This is the most important step in preventing heat related illness.
- Spend more time in air-conditioned places. Take more frequent breaks from strenuous activities.
- Don't get too much sun. Apply sunscreen, and make sure to spend some time in the shade.
- Limit strenuous activities
- Wear lightweight, light colored clothing that breathes and does not absorb sunlight.

Lightning

- Immediately take shelter in a safe building with a roof and full walls on all sides
- Vehicles with a hard roof, and windows rolled up are also safe.
- Avoid using corded electronic devices. Also stay away from any sort of metal plumbing such as a shower, or sink.
- **If caught outside**, find a low area away from anything tall or isolated and squat down on the balls of your feet.
- Remember, when thunder roars, go indoors!

